Little Pend Oreille National Wildlife Refuge
Eurasian Water Milfoil Eradication

Refuge/complex name: Little Pend Oreille

Project title: McDowell Lake Eurasian Water Milfoil Eradication

Project description:

Eurasian water milfoil (*Myriophyllum spicatum*) was found in McDowell Lake during an annual monitoring survey in August of 2011. Milfoil is a rapidly spreading aquatic weed with the potential to quickly overrun a small lake making it unsuitable for other species. Milfoil readily spreads via plant fragments caught on boats, trailers or can spread by currents. It exists in the Little Pend Oreille Chain Lakes which are several miles upstream of the refuge as well as other area lakes. These lakes are the likely source of this current McDowell Lake infestation. Milfoil is managed in other area lakes and the Pend Oreille River with varying degrees of success.

Milfoil was first discovered in McDowell Lake in 2001. By 2005 the lake was completely overrun with little open water left. Herbicide eradication efforts were successfully completed in early 2006. Annual monitoring surveys failed to detect milfoil from 2006 through 2010, indicating this is likely a reinfestation.

The 2011 survey estimated 15-20% of the shoreline had been infested. If not treated soon the entire 48 acre lake will be infested in a few years. We are proposing treating the entire lake to completely eradicate the milfoil using Sonar Q (fluridone). This is a slow release granule applied directly to the water.

The manufacturer recommends application in mid-May followed by weekly water analysis for 4 weeks. Depending on Sonar levels in the water additional pesticide will be added to maintain recommended levels to achieve control of the milfoil. Additional IPM practices include posting milfoil information signs at access points. The site is not accessible by vehicle and nearly all access is via two trails. Both have been signed with information describing the milfoil problem and encouraging the public to examine and clean equipment. Mechanical treatments are generally not effective with this species. Since milfoil spreads from plant fragments, mechanical control facilitates its spread. .

We also propose to conduct scuba surveys of Bailey Lake to determine if it is also infested. Given it is also frequented by many fisherman which also use McDowell Lake it's a high risk for infestation.

What is potential for eradication of the invasive species?

The use of Sonar aquatic herbicide has proven effective at complete eradication of milfoil in other lakes in eastern Washington and northern Idaho. After the 2006 treatment no milfoil was observed in the lake during extensive monitoring efforts in 2006-10 indicating complete control until this most recent reinfestation. It is likely this control project will also be effective.

Does the project support achieving the refuge purpose?

The refuge purpose as stated in Executive Order 8104 defines the purpose of the refuge is to: provide a refuge and breeding ground for migratory birds and other wildlife. The portion of the refuge to be treated was acquired with funds generated by the Migratory Bird Hunting and Conservation Stamps for the purpose of providing habitat for water birds. If the lake succumbs to the milfoil invasion it will no longer be available to waterfowl, water birds or other wildlife, and would no longer meet the purpose for which the refuge was established or this parcel was acquired.

Does the project support biological integrity?

If not treated Eurasian milfoil will form a herbaceous monoculture in the lake, squeezing out native aquatic vegetation. Little if any open water will be available and many native species will not be able to utilize the system. In addition to several species of waterfowl, Bald Eagles, Osprey, coots, herons, rails, painted turtles, amphibians, native trout, and other species depend on the lake system for a portion of their habitat needs. Thus a milfoil monoculture would have severe impacts on biological integrity and diversity of the lake system.

Will the project involve support from partners?

Washington State Department of Fish and Wildlife will provide watercraft and personnel to help apply the herbicide. WA DFW staff are licensed for aquatic pesticide application and experienced with milfoil control.

What monitoring will be used to evaluate the project?

Annual monitoring of the lake started in 2005 and will continue with station resources. This includes GIS maps of any milfoil plants found.

Resources Requested

$20000	Purchase of Sonar Q aquatic herbicide
$2500	For a scuba survey of Bailey Lake
$400	For water testing following application @ $100/ week for four weeks

Resources Provided

Staff LPO Refuge: GS 9 Biologist 5 days, GS-5 Bio Tech 5 days
Contractor: Annual monitoring for infestation

Equipment LPO Refuge: Granule Spreader, water sampling equipment, vehicles, row boat

Staff WADFW: GS-11 equivalent Biologist 4 days

Equipment WADFW: air boat for herbicide application